mash before they have had an opportunity to reproduce. They are active travelers and when coming to a depression or furrow are likely to follow along the bottom for a distance before climbing out. They eat poison bait readily even when there is an abundance of unpoisoned food.

Eleven days after bait was applied lightly in a furrow 390 yards in length, 7853 dead beetles were counted. A large number, in addition, had crawled away from the furrow before dying. Poison bait was apparently as effective at the end of 10 days as when first distributed. Thousands of beetles were killed by broadcasting poison mash on waste land and around straw stacks. The cost of material for treating 40 acres by the furrow method was 70 cents, less than 2 cents per acre—furrows spaced 100 yards apart. By a mechanical device, a furrow was treated as fast as a team could walk. It appears possible to very nearly eradicate *E. hispilabris* in a community by use of poison bran during two successive seasons, if cooperative work is done over a large area. During the present year, the University of Idaho will carry on further work on life history and large scale control of species of Eleodes injurious to grain.

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**Some Ants noted to infest houses in Mississippi during the summer and fall of 1921.** During the summer and fall of 1921, the writer had the opportunity of observing many species of house ants in Mississippi. This opportunity arose during the period when the writer was scouting for Argentine ants or assisting in the campaign against these ants in many of the towns in the State. It seems well to mention very briefly here the species observed and what has been noted concerning their distribution and habits.

Ten species have been noted as house pests. Six of these are imported ants, the others are native ants. In mentioning these ants below, the writer will rank them according to his idea of their economic importance as house pests in Mississippi.

By far the worst house ant in the State is the Argentine ant, *Iridomyrmex humilis* Mayr., which has been recorded from forty-one towns in this State and no doubt occurs in many others, of which we have no record. As a house pest this ant has the habit of crawling everywhere; getting into peoples' beds, driving setting hens from the nest, crawling over ice cold meat in refrigerators and acting as distributors of injurious scale insects on shade trees and fruit trees.

The next two species, one of which is an imported ant, hold about equal rank as house pests. *M. pharaonis* L. and *Monomorium minimum* Buckley, are practically the same size and have similar habits, being particularly fond of meats and greases. The former is known as the small red ant or Pharaoh's ant, and the latter as the tiny black ant. Both species are widely distributed throughout the United States and the writer believes they are widely distributed in Mississippi, as he has found them in practically every town visited.

*Solenopsis geminata* Fabr., commonly known as the fire ant because of its stinging habit, seems to be a common house pest also. Like the two species above, it prefers meaty foods, but will eat sweets when the opportunity permits. The writer has not observed any of these ants nesting in houses and he doubts very much if they do so, since they are soil nesting species. Their crater-like nests in the soil are generally found in sunny spots. No doubt they stray into houses because of the scarcity of food outside.

Another species of this genus—the tiny yellow thief ant, *Solenopsis molesta* Say, is a house pest also. It resembles *M. pharaonis* superficially, but it is much smaller

than that species and can easily be distinguished from *M. pharaonis* when examined under a microscope. It not only occurs in houses, but has been noted to attack the seed of cereals in Kansas.

The acrobatic ant *Cremastogaster lineolata* Say, has been found to occur in a number of houses. This ant is widely distributed over the State and has a fondness for sweets. This is no doubt the reason why it is attracted to houses. Out doors it may nest under stones, in wood, in galls, etc. Because of these varied nesting habits it is possible that *lineolata* may nest in houses, but it is the writer's opinion that this is seldom, if ever, the case.

*Iridomyrmex analis* Mayr, an ant closely related to the Argentine ant in general character and habits and often mistaken for this species, has been found to give trouble in houses. This seems to be exceptional rather than the rule. These ants are also fond of sweets like their near relative the Argentine ant. The two species can be readily distinguished from each other by the presence of a sweetish sickening odor given off by the workers of *analis* when crushed, while the workers of *humilis* have no perceptible odor. *I. analis* also has a much lighter colored abdomen than the Argentine ant, workers of the latter being of a uniform brownish coloration.

*Tetramorium guineense* Fabr. has been noticed to occur in one of the sea port towns of this State—Pascagoula. It is an imported species, having come from the Old World. In some towns in the United States it has assumed importance as a house infesting species. So far as the writer knows it has caused no trouble in Mississippi.

Another imported species, *Solenopsis geminata* Fabr. subsp. *rufa* Jerdon, has been recorded from Tupelo. This ant, which is also an Old World species is capable of becoming a house pest, although it has not been reported so from that town to date. A striking fact is that no other species seems to be present in the town where this ant occurs. It is quite possible that *S. geminata rufa* has driven out the native ants.

*Camponotus caryae* var. *rasilis*, a very striking red and black species that nests in trees, has been observed to infest one house this year. The workers showed a particular fondness for sweets, infesting jam, sugar and syrup.

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*Mississippi State Plant Board*

**Sulphur Investigations.** It is most gratifying to state that the Crop Protection Institute has succeeded in securing the cooperation of three sulphur companies—The Union Sulphur Company, The Freeport Sulphur Company and The Texas Gulf Sulphur Company—in providing for basic studies of both the entomological and phytopathological aspects of sulphur, each in relation to meteorological conditions. These companies have agreed to provide $7500 a year in addition to raw materials for a period of two years, the project to be administered by the Crop Protection Institute. It is expected that two or three research men will be located in existing laboratories, probably state experiment stations, under conditions which will permit of a thorough investigation of all the important factors, beginning with elemental sulphur and from this proceeding to compounds of sulphur.

This is a gratifying start toward solving problems of vital importance. May it prove to be only the beginning of a series of studies directed toward developing more efficient insecticides and fungicides.

E. P. FELT